ATIS 2

SKY

PARAGLIDERS

User manual for Atis 2 Paragliders, S, M, L, XL
(This guide conforms to requirements as set out in Regulation EN926-2:2005.)

A. General information

1. Model name: Atis 2 S, Atis M, Atis L, Atis XL

2. Name & address of manufacturer

Sky Paragliders a.s.,
Okruzni 39
739 11 Frydlant nad Ostravici
Czech Republic
www.sky-cz.com; info@sky-cz.com

3. Total minimum & maximum weights in flight:

see the technical data

4. Brake range requirements

5. The Atis 2 is an intermediate paraglider aimed at pilots who have finished their school training and who fly a minimum of 30 times a year.

6. The Atis 2 has been certified in Category B, having met all the requirements of regulation EN 926-2/august 2005

7. This user manual version dated 10 October 2006

B. Pilot profile

The Atis 2 paraglider offers 'good passive safety' with 'forgiving flying characteristics'. It has a moderate resistance to deflations.

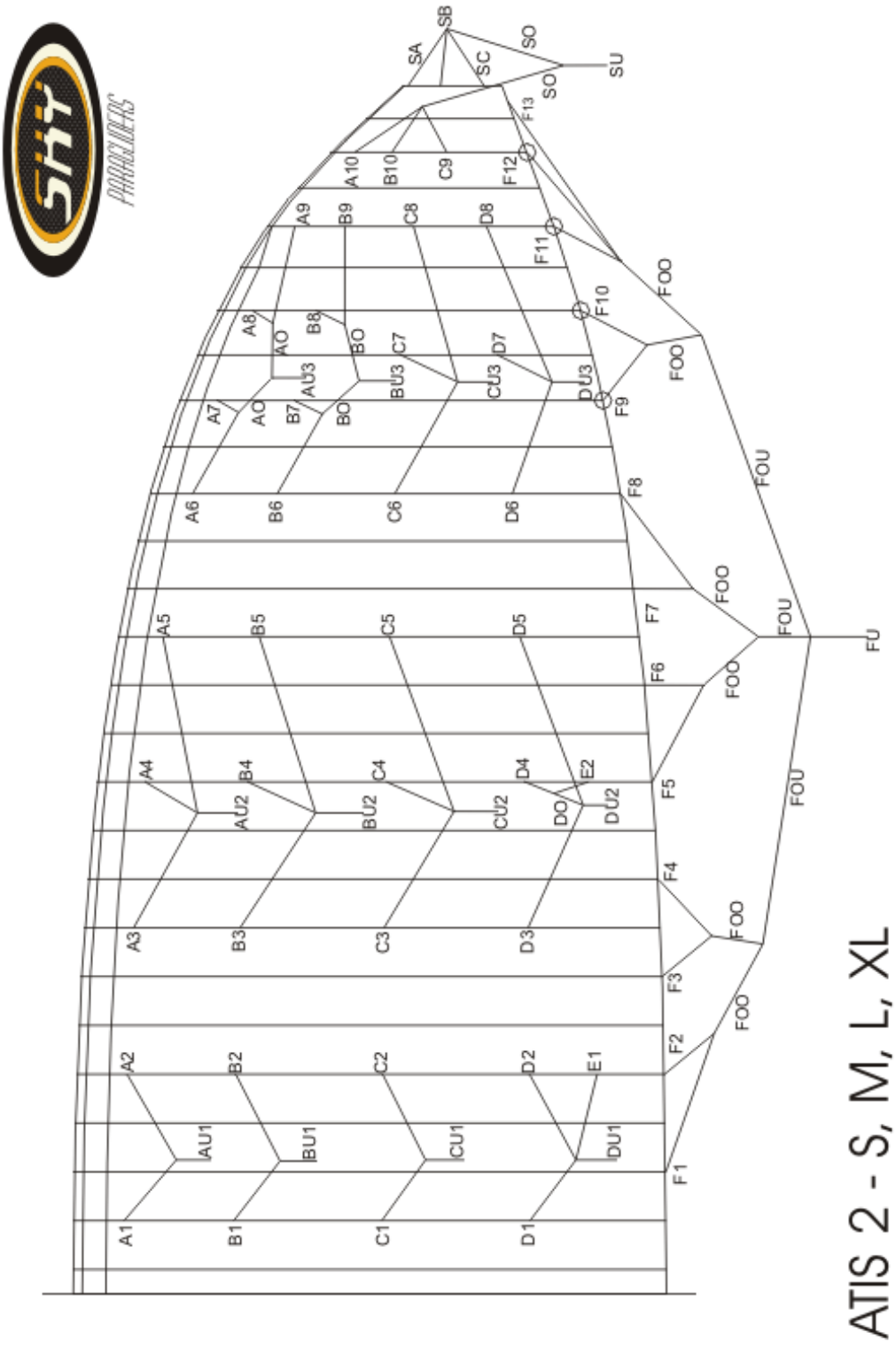
This Atis 2 is not a beginners paraglider due to its glide ratio of more than 8.5 and its handling characteristics.

C. Dimensions, diagrams and characteristics

1a. Cross-section of Atis 2

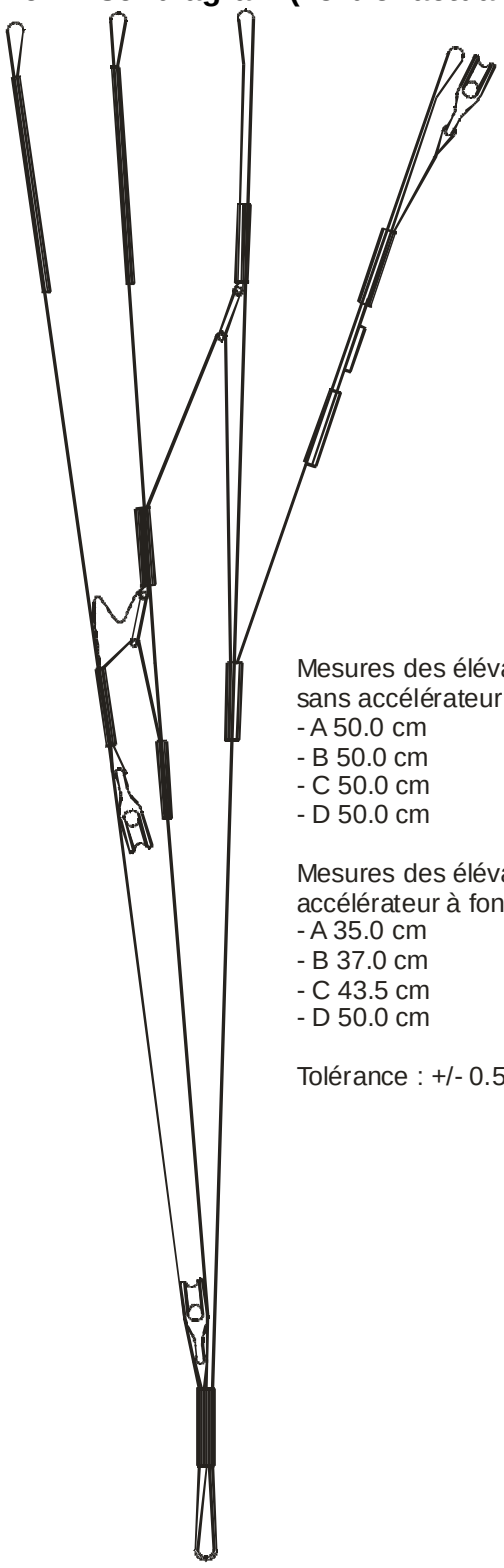
A lines – red
B lines – blue
C lines – purple
D lines – green
Brake lines - yellow

1b. Line plan



ATIS 2 - S, M, L, XL

1c. Riser diagram (45% of actual size)



Mesures des élévateurs
sans accélérateur :
- A 50.0 cm
- B 50.0 cm
- C 50.0 cm
- D 50.0 cm

Mesures des élévateurs
accélérateur à fond :
- A 35.0 cm
- B 37.0 cm
- C 43.5 cm
- D 50.0 cm

Tolérance : +/- 0.5 cm

Length of risers in standard trim
Length of risers with full accelerator
Tolerance +/- 0.5cm

2. Flat span:
see technical data

3. Projected surface area:
see technical data

4. Number of cells:
see technical data

5. Number of risers:
see technical data

6. There is no test sticker on our certified gliders.

7. Accelerator travel: 15cm
(see also diagram of riser bellow)

8. The brake lines are adjusted to the correct length but can, if necessary, be shortened by 2cm or lengthened by 5cm.

9. Side views of risers: refer to line plan on page 3 and to the line lists in Annex A1 – A4

10. n/a

11. n/a

12. Side view of risers: refer to diagram of risers above (45% of actual size)

13. Technical data

ATIS 2	S	M	L	XL
Layout surface (m^2)	23,11	25,00	26,65	28,83
Layout span (m)	10,86	11,29	11,66	12,12
Layout aspect ratio	5,10	5,10	5,10	5,10
Projected surface (m^2)	20,69	22,38	23,86	25,80
Projected span (m)	9,10	9,47	9,77	10,16
Projected aspect ratio	4,00	4,00	4,00	4,00
Number of cells	53	53	53	53
Weight of the glider (kg)	5,0	5,2	5,4	5,7
Take-off load (kg)	60-80	75-95	87-110	105-130
Trim speed (km/h)	37	37	37	37
Minimum speed (km/h)	23	23	23	23
Maximum speed (km/h)	48	48	48	48
Max. gliding ratio	8,5	8,5	8,5	8,5
Min. sink rate (m/s)	1,15	1,15	1,15	1,15
Test	EN B	EN B	EN B	EN B

D. Flying techniques

The Atis 2 is flown conventionally however there are several points listed below which should allow you to familiarise yourself with your new paraglider more quickly.

1. Checking the paraglider before take off

Check the wing: check it is not torn and that the internal structure (ribbing) is not damaged.

Check the lines: Check they are not damaged or tangled.

Check the quick links: Check that the quick links which link the lines to the risers, are correctly tightened and undamaged.

Check the risers: Check they are not damaged or twisted. Check the speed system works freely and that the lines are long enough to ensure that the accelerator system is not permanently on.
Lastly, check that the brake handles are correctly attached and that each brake line runs freely in its pulley.

2. Take off

Lay your paraglider out with the leading edge in a horseshoe shape. Hold the A risers near the quick links and move forward until the slack has been taken out of the lines. You should now be perfectly centred with your wing.

With no, or light, head wind and the lines tensioned, the Atis 2 inflates rapidly. It is important that you keep the risers correctly oriented to your body, if too far forward or back you are unlikely to have a clean inflation.

A controlled inflation allows you to check the wing and lines during the last phase as it comes up, and thus avoids the need to brake. Depending on the wind conditions, or the slope a bit of brake can allow you to take off more quickly.

3. Landing

Because of the exceptional glide care must be taken during approach and landing. The Atis 2 is an extremely agile glider and is sensitive to small inputs - over-braking can result in significant responses. We therefore recommend that you have your first flights at a site you know well, in easy conditions.

With negative steering you will have more time to carry out manoeuvres calmly and therefore you will reduce pendulum movements of your paraglider.

Reminder: negative steering involves applying your brakes symmetrically by about 30% of your maximum range to slow the paraglider, then carrying out turns by releasing the outside brake.

Speeding up just prior to landing allows a more effective flare and therefore a more gentle landing.

4. Turning

The Atis 2 was designed to perform well in turns and will centre in thermals even without active piloting.

Negative steering (see above) on the one hand slows the paraglider in certain phases of flight and, on the other hand, reduces excessive rolling during turn reversals. It is not only designed to turn (with approx 30% brake) but also to fly slowly to help to identify areas of lift and to keep the paraglider flatter to maximise the sink rate in a turn (with 15% brake).

5. Rapid descent techniques

To descend you generally move away from areas of lift, however if, for whatever reason, you are having problems coming down then you can use the following techniques to increase your sink rate.

A. Big Ears

Pull down on the outside A lines until the wingtips fold back on themselves. We recommend that you fold each wingtip separately and not at the same time.
Keep the lines taut to stop the wingtips from re-opening.
Depending on the size of the big ears, the sink rate can increase to 3-4m/s.

As soon as you release the lines the paraglider should spontaneously reopen. You can speed it up by pumping the brakes with a positive input. If you pump the brakes then we recommend that you open one side then the other. Pulling down on both brakes simultaneously can result in a stall.

B. Spiral

The Atis 2 is a manoeuvrable wing that responds easily to input. To enter a spiral, apply one brake progressively to about 35% and hold it in this position. The speed of rotation will increase progressively, as will the pressure on the brake and the centripetal force that you experience. You can decrease or increase the angle or speed of rotation by releasing, or pulling down on the brake by several centimetres.

Once mastered the spiral allows you to descend by more than 10m/s. Movements which are too abrupt or badly synchronised, or entering into a spiral too quickly can result in a spin.

Attention! The spiral is not a simple manoeuvre. The kinetic energy built up must be controlled so as to allow a controlled exit from the spiral.

C. B-line stall

Grasp the B risers at the quick links and pull them down symmetrically. The paraglider stalls and drops backwards before stabilising overhead. The descent rate increases to 6-8m/s. To exit the B-line stall raise both hands together with a single, quick, movement. As soon as you release the B-risers the Atis 2 should return to normal flight. If the B-line stall is exited incorrectly it may go into a parachutal (deep) stall. Application of the speed bar will effect a recovery. If there is no speed bar then by pulling down on the A-risers by 4-5cm you should achieve the same result.

Caution: unlike big ears & the spiral, in the B-line stall the glider is in a stalled state.

6. Performance & use of brakes

The Atis 2 has its best glide at trim speed (no brakes) - about 38km/h. The minimum sink rate is achieved by applying approx 15% brake.

Beyond 30% brake, the aerodynamics and performance of the Atis 2 deteriorates and the effort required to manoeuvre increases quickly.

The very heavy brake pressure warns of an impending stall, this occurs at full brake travel (100% brake).

In normal flying conditions the optimum position for the brakes, in terms of performance and safety, lies in the top third of the braking range.

7. Use of speed bar

The Atis 2 is fitted with a speed system. Refer to your harness manufacturers instructions for fitting and positioning of the speed bar.

Before launching check the speed bar works freely and that the lines are long enough to ensure that it is not permanently engaged.

If the harness is fitted with a front mounted reserve the speed bar lines must pass under the reserve bridle so that it can be deployed easily.

Use of the speed bar increases the maximum speed of the paraglider by up to 35% of trim speed. However, it does reduce the angle of attack and therefore you may risk a frontal (or asymmetric) collapse. We therefore do not advise using the speed bar near to the ground or in turbulent air.

8. Assymmetric or frontal (symmetric) collapses

Whilst testing has shown the Atis 2 ability to come out of a collapse without the intervention of the pilot, we recommend active piloting in the case of a asymmetric or frontal collapse. By doing this you will reduce the loss of altitude and any change of direction.

In case of frontal (symmetric collapse):
Bring both brakes down symmetrically to speed up the re-opening of the paraglider, then bring your hands back up immediately.

In case of asymmetric collapse
Keep the paraglider flying straight by leaning in the opposite direction to the collapse and by applying some opposite brake.
Speed up the re-opening of the closed side by a single, positive, input on the collapsed side.

9. Full stall

Certain behaviour or weather conditions can bring about a full stall. This is a serious incident and one that is difficult to control. If it happens less than 100m above the ground we recommend that you deploy your reserve immediately.

Main causes of a full stall
1. A poorly timed, or over-exaggerated input, with the brakes, when the wing has a reduced air speed (eg, when coming out of a spiral or when the paraglider is speeding up after a B-line stall).

2. A build up of droplets of water on the leading edge (from rain or cloud) can result in a stall due to disrupted airflow over the leading edge. This has been linked to high levels of porosity in glider fabrics.

Whatever the cause, a full stall can be either symmetrical or a spin. In both cases the pilot has two possible courses of action.

1. If it happens above 100m and the pilot is familiar with stall recovery, they should execute a full stall, stabilise the wing above their head and lift both hands progressively.

2. If below 100m or if the pilot is unfamiliar with stall recovery then they should immediately deploy their reserve.

10. Flying without brakes
If a brake line or pulley breaks it is possible to fly the Atis 2 using the D risers (rear risers). The movements must be well controlled as the deformation of the wing due to the traction on the D risers is greater than that produced by using the brakes.

> *The Atis 2 has been certified in Category B designed for qualified pilots who have undertaken their training at a recognised school and who have a certain amount of experience*

10. Comments on the testing procedure

All manoeuvres were carried out over water in a stable air mass with standard temperature, humidity and pressure. They were carried out by professional pilots trained to react to any problem in the most appropriate manner.

Test reports are available on the website: www.sky-cz.com

11. Harness adjustments

For test flights the pilots used ABS harnesses with the following set-up.

Size	*Distance from seat board to hang points*	*Distance between hang points*
Atis S	*41-42cm*	*42-43cm*
Atis M	*42-43cm*	*43-44cm*
Atis L	*43-44cm*	*44-45cm*
Atis XL	*44-45cm*	*45-46cm*

We recommend using a harness with the maximum settings as used in testing.

Excessive cross bracing increases the risk of the risers twisting. A looser setting will result in leaning more towards a side of a collapse.

C. Maintenance & checks

1. Advice on maintenance

The life of your paraglider depends largely on the care with which you maintain and use it.

Avoid dropping it on its top surface or on its leading edge during inflation or landing. Don't drag it across the ground when moving it.

Don't expose it unnecessarily to sunlight.

Choose a technique that doesn't damage the stiffeners and that doesn't crease the internal structure excessively. To maximise the life of your glider we do not recommend the use of stuff sacks: the abrasion of the material will decrease the life expectancy of the fabric – in particular its internal structure.

Always use the inner bag to avoid any direct contact with the metalwork on the harness and the rucksack.

Never store your paraglider when it is damp. If immersed in sea water then rinse in fresh water. Do not use any detergents. Dry your paraglider away from direct light in a dry and well-aired place.

Empty any foreign bodies from your paraglider regularly, for example sand, stones or animal or vegetable matter which may eventually decay.

2. Checks

Before delivery

Your paraglider has been checked in the factory and has been flight tested by the vendor.

It is delivered with a standard brake setting as used during testing.

Periodic checks & repairs

For safety reasons we recommend that you have your paraglider checked at least once a year, or every 100 flights, and every time that you notice a change in its behaviour.

D. Guaranty

The Atis 2 paraglider is guaranteed against any manufacturing fault for one year after delivery.

The guaranty does not cover:
Damage due to insufficient maintenance, incorrect use, inappropriate conditions or heavy impacts.

Wear & tear

Sky Paragliders a.s.
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739 11 Frýdlant nad Ostravicí
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Atis 2 S

NAME	QUANTITY	MATERIAL	LL LENGTH	WIRE LENGTH
A1	2	7850-130-14	129,5	654,3
A2	2	7850-130-14	127	651,8
AU1	**2**	**7850-200-14**	**524**	
A3	2	7850-080-14	243,5	650,8
A4	2	7850-080-14	235,5	642,8
A5	2	7850-080-14	239,5	646,8
AU2	**2**	**7850-200-14**	**406,5**	
A6	2	7850-080-14	122	644,8
A7	2	7850-080-14	115,5	638,3
A8	2	7850-080-14	111,5	634,3
A9	2	7850-080-14	109,5	632,3
AO	4	7850-080-14	115,5	
AU3	**2**	**7850-160-14**	**406,5**	

B1	2	7850-130-15	122,5	647,3
B2	2	7850-130-15	120	644,8
BU1	**2**	**7850-200-15**	**524**	
B3	2	7850-080-15	237	644,3
B4	2	7850-080-15	229,5	636,8
B5	2	7850-080-15	234,5	641,8
BU2	**2**	**7850-200-15**	**406,5**	
B6	2	7850-080-15	117,5	640,3
B7	2	7850-080-15	112	634,8
B8	2	7850-080-15	109	631,8
B9	2	7850-080-15	107,5	630,3
BO	4	7850-080-15	115,5	
BU3	**2**	**7850-160-15**	**406,5**	

C1	2	7850-080-04	125	649,8
C2	2	7850-080-04	122,5	647,3
CU1	**2**	**7850-200-04**	**524**	
C3	2	7850-080-04	239	646,3
C4	2	7850-080-04	231,5	638,8
C5	2	7850-080-04	236	643,3
CU2	**2**	**7850-200-04**	**406,5**	
C6	2	7850-080-04	217,5	641,3
C7	2	7850-080-04	209,5	633,3
C8	2	7850-080-04	206,5	630,3
CU3	**2**	**7850-160-04**	**423**	

NAME	QUANTITY	MATERIAL	LL LENGTH	WIRE LENGTH
D1	2	7850-080-07	134,5	659,3
D2	2	7850-080-07	132	656,8
E1	2	7850-080-07	140,5	665,3
DU1	**2**	**7850-200-07**	**524**	
D3	2	7850-080-07	248,5	655,8
D4	2	7850-080-07	130,5	648,3
E2	2	7850-080-07	138,5	656,3
DO	2	7850-080-07	110,5	
D5	2	7850-080-07	244,5	651,8
DU2	**2**	**7850-200-07**	**406,5**	
D6	2	7850-080-07	225	648,8
D7	2	7850-080-07	215,5	639,3
D8	2	7850-080-07	210,5	634,3
DU3	**2**	**7850-160-07**	**423**	

A10	2	7850-080-07	82	611,3
B10	2	7850-080-07	80,5	609,8
C9	2	7850-080-07	86	615,3
SA	2	7850-080-07	65,5	594,8
SB	2	7850-080-07	65	594,3
SC	2	7850-080-07	69,5	598,8
SO	4	7850-080-07	264	
SU	**2**	**7850-160-07**	**265**	

F1	2	7850-080-40	147	734,3
F2	2	7850-080-40	128	715,3
F3	2	7850-080-40	115	702,3
F4	2	7850-080-40	108	695,3
F5	2	7850-080-40	99,5	686,8
F6	2	7850-080-40	88,5	675,8
F7	2	7850-080-40	84	671,3
F8	2	7850-080-40	86,5	673,8
F9	2	7850-080-40	85	675,5
F10	2	7850-080-40	80,5	671
F11	2	7850-080-40	78,5	669
F12	2	7850-080-40	78	668,5
F13	2	7850-080-40	81	668,3
FOO	12	7850-080-40	115,5	
FOU	**6**	**7850-130-40**	**235,5**	
FU	**2**	**7850-240-040**	**235,5**	

Atis 2 M

NAME	QUANTITY	MATERIAL	LL LENGTH	WIRE LENGTH
A1	2	7850-130-14	134,5	680,3
A2	2	7850-130-14	132	677,8
AU1	**2**	**7850-200-14**	**545**	
A3	2	7850-080-14	253	676,8
A4	2	7850-080-14	244,5	668,3
A5	2	7850-080-14	249	672,8
AU2	**2**	**7850-200-14**	**423**	
A6	2	7850-080-14	126,5	670,3
A7	2	7850-080-14	120	663,8
A8	2	7850-080-14	116	659,8
A9	2	7850-080-14	113,5	657,3
AO	4	7850-080-14	120	
AU3	**2**	**7850-160-14**	**423**	

B1	2	7850-130-15	127,5	673,3
B2	2	7850-130-15	125	670,8
BU1	**2**	**7850-200-15**	**545**	
B3	2	7850-080-15	246,5	670,3
B4	2	7850-080-15	238,5	662,3
B5	2	7850-080-15	243,5	667,3
BU2	**2**	**7850-200-15**	**423**	
B6	2	7850-080-15	122,5	666,3
B7	2	7850-080-15	116,5	660,3
B8	2	7850-080-15	113,5	657,3
B9	2	7850-080-15	111,5	655,3
BO	4	7850-080-15	120	
BU3	**2**	**7850-160-15**	**423**	

C1	2	7850-080-04	129,5	675,3
C2	2	7850-080-04	127	672,8
CU1	**2**	**7850-200-04**	**545**	
C3	2	7850-080-04	248,5	672,3
C4	2	7850-080-04	240,5	664,3
C5	2	7850-080-04	245	668,8
CU2	**2**	**7850-200-04**	**423**	
C6	2	7850-080-04	226	666,8
C7	2	7850-080-04	218	658,8
C8	2	7850-080-04	214,5	655,3
CU3	**2**	**7850-160-04**	**440**	

NAME	QUANTITY	MATERIAL	LL LENGTH	WIRE LENGTH
D1	2	7850-080-07	140	685,8
D2	2	7850-080-07	137,5	683,3
E1	2	7850-080-07	146,5	692,3
DU1	**2**	**7850-200-07**	**545**	
D3	2	7850-080-07	258,5	682,3
D4	2	7850-080-07	135	673,8
E2	2	7850-080-07	143,5	682,3
DO	2	7850-080-07	115	
D5	2	7850-080-07	254	677,8
DU2	**2**	**7850-200-07**	**423**	
D6	2	7850-080-07	234	674,8
D7	2	7850-080-07	224,5	665,3
D8	2	7850-080-07	219	659,8
DU3	**2**	**7850-160-07**	**440**	

A10	2	7850-080-07	85,5	635,8
B10	2	7850-080-07	84	634,3
C9	2	7850-080-07	89,5	639,8
SA	2	7850-080-07	68,5	618,8
SB	2	7850-080-07	68	618,3
SC	2	7850-080-07	72,5	622,8
SO	4	7850-080-07	275	
SU	**2**	**7850-160-07**	**275**	

F1	2	7850-080-40	153	763,8
F2	2	7850-080-40	133	743,8
F3	2	7850-080-40	119,5	730,3
F4	2	7850-080-40	112	722,8
F5	2	7850-080-40	103,5	714,3
F6	2	7850-080-40	92	702,8
F7	2	7850-080-40	87,5	698,3
F8	2	7850-080-40	90	700,8
F9	2	7850-080-40	88,5	702,5
F10	2	7850-080-40	83,5	697,5
F11	2	7850-080-40	81,5	695,5
F12	2	7850-080-40	81	695
F13	2	7850-080-40	84	694,8
FOO	12	7850-080-40	120	
FOU	**6**	**7850-130-40**	**245**	
FU	**2**	**7850-240-040**	**245**	

Atis 2 L

NAME	QUANTITY	MATERIAL	LL LENGTH	WIRE LENGTH
A1	2	7850-130-14	138,5	702,3
A2	2	7850-130-14	135,5	699,3
AU1	**2**	**7850-200-14**	**563**	
A3	2	7850-080-14	261	698,8
A4	2	7850-080-14	252,5	690,3
A5	2	7850-080-14	256,5	694,3
AU2	**2**	**7850-200-14**	**437**	
A6	2	7850-080-14	130,5	692,3
A7	2	7850-080-14	123,5	685,3
A8	2	7850-080-14	119	680,8
A9	2	7850-080-14	117	678,8
AO	4	7850-080-14	124	
AU3	**2**	**7850-160-14**	**437**	

B1	2	7850-130-15	131,5	695,3
B2	2	7850-130-15	128,5	692,3
BU1	**2**	**7850-200-15**	**563**	
B3	2	7850-080-15	254	691,8
B4	2	7850-080-15	246	683,8
B5	2	7850-080-15	251	688,8
BU2	**2**	**7850-200-15**	**437**	
B6	2	7850-080-15	126	687,8
B7	2	7850-080-15	120	681,8
B8	2	7850-080-15	117	678,8
B9	2	7850-080-15	115	676,8
BO	4	7850-080-15	124	
BU3	**2**	**7850-160-15**	**437**	

C1	2	7850-080-04	134	697,8
C2	2	7850-080-04	131	694,8
CU1	**2**	**7850-200-04**	**563**	
C3	2	7850-080-04	256	693,8
C4	2	7850-080-04	248	685,8
C5	2	7850-080-04	253	690,8
CU2	**2**	**7850-200-04**	**437**	
C6	2	7850-080-04	233,5	688,3
C7	2	7850-080-04	225	679,8
C8	2	7850-080-04	222	676,8
CU3	**2**	**7850-160-04**	**454**	

NAME	QUANTITY	MATERIAL	LL LENGTH	WIRE LENGTH
D1	2	7850-080-07	144,5	708,3
D2	2	7850-080-07	141,5	705,3
E1	2	7850-080-07	151	714,8
DU1	**2**	**7850-200-07**	**563**	
D3	2	7850-080-07	266,5	704,3
D4	2	7850-080-07	139,5	695,8
E2	2	7850-080-07	148,5	704,8
DO	2	7850-080-07	118,5	
D5	2	7850-080-07	262	699,8
DU2	**2**	**7850-200-07**	**437**	
D6	2	7850-080-07	242	696,8
D7	2	7850-080-07	232	686,8
D8	2	7850-080-07	226,5	681,3
DU3	**2**	**7850-160-07**	**454**	

A10	2	7850-080-07	88	656,3
B10	2	7850-080-07	86,5	654,8
C9	2	7850-080-07	92	660,3
SA	2	7850-080-07	70,5	638,8
SB	2	7850-080-07	70	638,3
SC	2	7850-080-07	74,5	642,8
SO	4	7850-080-07	284	
SU	**2**	**7850-160-07**	**284**	

F1	2	7850-080-40	157,5	788,3
F2	2	7850-080-40	137	767,8
F3	2	7850-080-40	123	753,8
F4	2	7850-080-40	115,5	746,3
F5	2	7850-080-40	106,5	737,3
F6	2	7850-080-40	94,5	725,3
F7	2	7850-080-40	90	720,8
F8	2	7850-080-40	92,5	723,3
F9	2	7850-080-40	91	725
F10	2	7850-080-40	86	720
F11	2	7850-080-40	84	718
F12	2	7850-080-40	83,5	717,5
F13	2	7850-080-40	87	717,8
FOO	12	7850-080-40	124	
FOU	**6**	**7850-130-40**	**253**	
FU	**2**	**7850-240-040**	**253**	

Atis 2 XL

NAME	QUANTITY	MATERIAL	LL LENGTH	WIRE LENGTH
A1	2	7850-130-14	145	730,8
A2	2	7850-130-14	142	727,8
AU1	**2**	**7850-200-14**	**585**	
A3	2	7850-080-14	272	726,8
A4	2	7850-080-14	263	717,8
A5	2	7850-080-14	267,5	722,3
AU2	**2**	**7850-200-14**	**454**	
A6	2	7850-080-14	136	719,8
A7	2	7850-080-14	128,5	712,3
A8	2	7850-080-14	124,5	708,3
A9	2	7850-080-14	122	705,8
AO	4	7850-080-14	129	
AU3	**2**	**7850-160-14**	**454**	

B1	2	7850-130-15	137,5	723,3
B2	2	7850-130-15	134,5	720,3
BU1	**2**	**7850-200-15**	**585**	
B3	2	7850-080-15	265	719,8
B4	2	7850-080-15	256,5	711,3
B5	2	7850-080-15	262	716,8
BU2	**2**	**7850-200-15**	**454**	
B6	2	7850-080-15	131,5	715,3
B7	2	7850-080-15	125	708,8
B8	2	7850-080-15	122	705,8
B9	2	7850-080-15	120	703,8
BO	4	7850-080-15	129	
BU3	**2**	**7850-160-15**	**454**	

C1	2	7850-080-04	140	725,8
C2	2	7850-080-04	137	722,8
CU1	**2**	**7850-200-04**	**585**	
C3	2	7850-080-04	267	721,8
C4	2	7850-080-04	258,5	713,3
C5	2	7850-080-04	263,5	718,3
CU2	**2**	**7850-200-04**	**454**	
C6	2	7850-080-04	242,5	715,8
C7	2	7850-080-04	234	707,3
C8	2	7850-080-04	230,5	703,8
CU3	**2**	**7850-160-04**	**472,5**	

NAME	QUANTITY	MATERIAL	LL LENGTH	WIRE LENGTH
D1	2	7850-080-07	150,5	736,3
D2	2	7850-080-07	147,5	733,3
E1	2	7850-080-07	157,5	743,3
DU1	**2**	**7850-200-07**	**585**	
D3	2	7850-080-07	277,5	732,3
D4	2	7850-080-07	145,5	723,8
E2	2	7850-080-07	155	733,3
DO	2	7850-080-07	123,5	
D5	2	7850-080-07	273	727,8
DU2	**2**	**7850-200-07**	**454**	
D6	2	7850-080-07	251	724,3
D7	2	7850-080-07	240,5	713,8
D8	2	7850-080-07	235	708,3
DU3	**2**	**7850-160-07**	**472,5**	

A10	2	7850-080-07	92	682,3
B10	2	7850-080-07	90,5	680,8
C9	2	7850-080-07	96,5	686,8
SA	2	7850-080-07	74	664,3
SB	2	7850-080-07	73,5	663,8
SC	2	7850-080-07	78	668,3
SO	4	7850-080-07	295	
SU	**2**	**7850-160-07**	**295**	

F1	2	7850-080-40	163,5	819,3
F2	2	7850-080-40	142,5	798,3
F3	2	7850-080-40	128	783,8
F4	2	7850-080-40	120	775,8
F5	2	7850-080-40	110,5	766,3
F6	2	7850-080-40	98	753,8
F7	2	7850-080-40	93,5	749,3
F8	2	7850-080-40	96	751,8
F9	2	7850-080-40	94,5	753,5
F10	2	7850-080-40	89,5	748,5
F11	2	7850-080-40	87	746
F12	2	7850-080-40	86,5	745,5
F13	2	7850-080-40	90	745,8
FOO	12	7850-080-40	129	
FOU	**6**	**7850-130-40**	**263**	
FU	**2**	**7850-240-040**	**263**	